

# L-5 NEWS

A Newsletter from the L-5 Society

Number I , Sept - 1975

## Morris K. Udall Gives Support To O'Neill

Following is the text of a letter, dated July 30, 1975, from Udall, an announced Democratic candidate for President, to Dr. Robert C. Seamans, Jr., Administrator of the Energy Research and Development Administration (ERDA):

Recently I have had occasion to meet with Dr. Gerard O'Neill of Princeton University and some of my Tucson constituents, who discussed with me the intriguing concept of space colonies and their potential to supply energy to the earth.

Perhaps you have read about these ideas. Although the concept may appear to sound far-fetched on first examination, studies have shown that these colonies could be self sufficient by using the natural resources of the moon and asteroids and that the investment would not be many times greater than that for Apollo.

Of most immediate interest is the possibility of obtaining significant supplies of energy anywhere on earth from microwave beams which would relay energy collected from solar thermal power stations in space. Dr. O'Neill and his associates are having difficulty in obtaining funds to do the design study necessary to test further the feasibility of the concept. During fiscal year 1976, such a study would amount to about \$1 million and would seem to be consistent with ERDA's increasing commitment to funding R & D for alternative energy sources.

In a time of dwindling energy supplies I am deeply concerned that every reasonable avenue be pursued vigorously in the quest for new energy generating sources and techniques. A one-year delay at the beginning of the R & D cycle would mean a one-year delay in implementing the technology if it turns out to be the way to go. If a given scheme does not work out, not much will have been lost in trying.

I hope you will give Dr. O'Neill's proposal your most careful consideration. If there is anything we in Congress can do to expedite support for studies of important new programs like this, please let me know.

Sincerely,

Morris K. Udall

## NASA Summer Study Unanimously Recommends Space Communities

A summer study program jointly sponsored by the NASA Ames Research Center and Stanford University ended with a unanimous recommendation from its participants that the United States, alone or in concert with other nations, develop space manufacturing facilities, complete with a community of ten thousand. Cost was estimated at \$100 billion, but sale of solar power from space beamed to earth via microwaves was expected to pay the initial cost many times over.

The next issue of the L-5 News will contain a discussion of some of the problems encountered and overcome, written by some of the Summer Study participants. Of special interest are the work on vapor deposition of massive structures and the economic analysis of the project. The full Summer Study report is not expected to be completed and edited for several months.

## O'Neill Testifies Before Congress

July 23 O'Neill testified before the House Sub-Committee on Space Science and Applications, chaired by Representative Don Fuqua of Florida. O'Neill said that even using a conservatively high cost estimate of \$178 billion and assuming capital costs of 10% per year, the entire project could be paid off in 24 years. Target dates for this proposal are the establishment of a construction site in 1982, and completion of the initial L-5 community of 10,000 people in 1988. The first power would be beamed to earth in 1989.

O'Neill compared the cost and timetable of this project with the proposed Project Independence, which would require as much time and would cost 600 to 2000 billion dollars!

The results of the Tucson poll (see below) were entered in the oral testimony.

## Tucson Poll Reveals Grass Roots Support For Space Communities,SSPS

Local publicity over a 2 month period in Tucson was capped by a random sample telephone poll taken July 19 - 20. On the question, "Have you heard of space colonization." 45% answered "Yes." Of these, 2/3 were in favor of the proposal. A question on Solar Satellite Power Stations revealed that 75% of the entire sample believed them to be feasible.

The originator of the SSPS concept, Dr. Peter Glaser, in correspondence with the L-5 News staff, wrote that:

"The concepts that Gerry O'Neill and I have been working on indicate that there are dimensions to human evolution which are not circumscribed by our terrestrial horizons. It is less important whether the space colonies or the SSPS take the specific form we now envision but rather that we recognize that the only limits placed on us are the boundaries of our creativity, understanding and knowledge. "

### Limits to Growth ?

A conference, "Limits to Growth '75," sponsored by the Club of Rome, the University of Houston and Mitchell Energy & Development Corp. will be held October 19 - 21 near Houston, Texas. Jay W. Forrester, Dennis L. Meadows, Sen. Jacob K. Javits and Herman Kahn, a noted critic of "Limits to Growth," are among the featured speakers. Persons wishing to attend may write or call:

Joseph W. Kutchin  
Mitchell Energy & Development Corp.  
3900 One Shell Plaza  
Houston, Texas 77002  
(713)-224-4522

This conference will discuss possible futures for mankind, most of which are rather bleak.

### The L-5 Society

The L-5 Society is being formed to educate the public about the benefits of space communities and manufacturing facilities, to serve as a clearing house for information and news in this fast developing area and to raise funds to support work on these concepts where public money is not available or is inappropriate. We will send membership cards and newsletters to those who respond. The effectiveness of the society depends on your response. It would be appreciated if you were to copy this newsletter and send it on to others who would be interested. Our clearly stated long range goal will be to disband the society in a mass meeting at L-5.

Short term projects (dependent upon financial response) are to aid Dr. O'Neill in completing his book on the L-5 concept, and to provide part of the paid staff (that for which government money is not available) to help him. Activity on his work has reached the point where it is impossible to even answer all the letters he receives.

Charter membership in the L-5 society is \$20; for students, \$10. In addition, we ask for tax deductible donations of any size. Every 6 months the L-5 News will publish an accounting of income and expenditures.

Please indicate on the membership form if you would be interested in forming a local chapter, and we will send you the names of those who respond in your area. (We will not give out any names on this mailing list unless you give us permission )

Services currently available to members are:

Speakers; we have a list of good speakers on space communities in many parts of the U. S.

Copies of O'Neill's testimony before Congress (56 pages).

Slides of artwork on the L-5 communities, including the Don Davis painting which appeared in the June 28, 1975, Saturday Review.

Please write or call the L-5 News if you have any information to offer or help you could provide.

### For More Detailed Information

A few copies of the unedited pre-proceedings of the 2nd Princeton University Space Manufacturing Facilities Conference, May 1975, are still available. The approximately 600 pages of Xeroxs may be ordered from:

Roger Miles  
Vivitronics Corporation  
20 Washington Road  
Princeton Junction, New Jersey 08550  
(609)-799-1079

Cost, including postage, is \$75.

Below is a short bibliography of recent articles on space colonization and related topics.

#### THE O'NEILL SPACE COLONIZATION CONCEPT

"The Colonization of Space", by Gerard K. O'Neill, Physics Today, September, 1974. p. 32-40. (Technical -- The "Watershed" Article)

"Colonization of Space", by Richard Reis, Mercury, July/August 1974, p. 4-10, 23. (Interview with Gerard K. O'Neill)

"Colonization at Lagrangia", by Graham Chedd. New Scientist, October 24, 1974, p. 247-9.

"Lagrangia: Pioneering in Space", Science News Letter, September 21, 1974, p. 183. (News article)

"Colonizing the Heavens", by Isaac Asimov, Saturday Review, June 28, 1975, p. 12-17.

"Colonies in Space", Time, June 3, 1974. (News article on first conference).

Harper's August 1975, p. 66-75.  
(Descriptive.)

"Colonizing Space", Time, May 26, 1974.  
(News article on second conference.)

"Arrival of the Age of Rama", by P. C. Davies,  
Nature, Vol. 252, December 13, 1974.  
(Editorial on possibilities of space coloni-  
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"A Lagrangian Community?", by Gerard K.  
O'Neill, Nature, Vol. 250, August 23,  
1974, p. 636. (Answer to "Limits to  
Growth" argument.)

LUNAR BASE AND MASS DRIVER

"Electromagnetic Launching as a Major Con-  
tribution to Space Flight", by Arthur C.  
Clarke, Journal of the British Interplane-  
tary Society, Vol. 9, No. 6, November  
1950, p. 261-7. (Technical.)

"Take-Off Point for a Lunar Colony", by  
Dr. R. C. Parkinson, Spaceflight,  
Vol. 16, No. 9, September 1974,  
p. 322-7.

SPACE MANUFACTURING

"Manufacturing in Space", by Hans F. Wuenschel.  
Astronautics and Aeronautics, September  
1972, p. 42-54. (Technical.)

"Materials Processing in Space -- New Chal-  
lenges for Industry ", by James H. Bredt  
and Brian O. Montgomery, Astronautics  
and Aeronautics, Vol. 13, No. 5, May  
1975, p. 22-41. (Technical.)

"Lunar Industries, Their Value for the Human  
Environment on Earth", by Kraft A.  
Ehrlicke, Acta Astronautica, Vol. I.  
p. 585-622, 1974. (23rd Internation  
Astronautical Congress.) (Technical.)

"The Third Industrial Revolution, The Exploita-  
tion of the Space Environment", by  
G. Harry Stine, Space Flight, Vol. 16,  
No. 9, September 1974. p. 327-34.

ORBITING SOLAR POWER FACILITIES

"An Orbiting Solar Power Station", Sky and  
Telescope, Vol. 49, No. 4, p. 227-9,  
April 1975. (Description of Dr. Peter  
Glaser's proposal.)

OTHER

"The Extraterrestrial Imperative", by Kraft A.  
Ehrlicke, Bulletin of the Atomic Scientists,  
November 1971, p. 18-26. (Philosophi-  
cal -- Descriptive.)

"The Relevance of Space", by Arthur Kantrowitz,  
Astronautics and Aeronautics, March  
1971, p. 34-5. (Philosophical.)

Readers having trouble finding any of  
these articles should address requests to:

Brad Barber  
c/o Analog Precision, Inc.  
1620 N. Park  
Tucson, Arizona 85719

For more information write or call:

**L-5 News**

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L-5 SOCIETY MEMBERSHIP FORM (Please use this form or a copy)

Name \_\_\_\_\_

Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_

Optional Data: \_\_\_\_\_  
Company or Organization \_\_\_\_\_ Title \_\_\_\_\_ Telephone \_\_\_\_\_

Would you like to form a local chapter or work actively in your area? \_\_\_\_\_

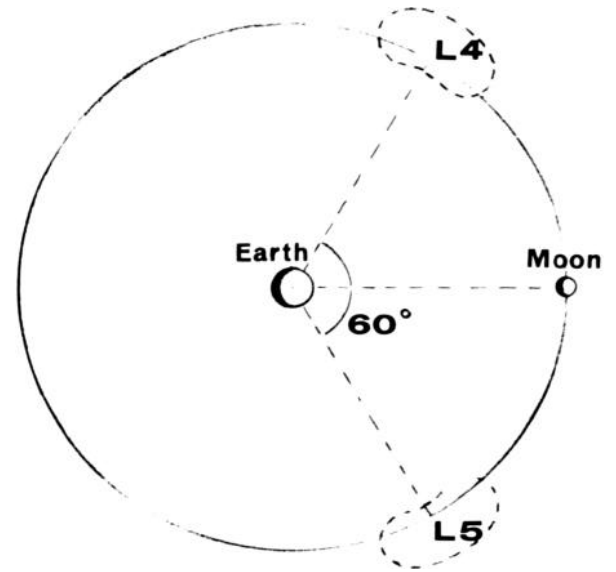
Please enclose your check for \$20.00 (\$10.00 for students.) Additional donations are appre-  
ciated and will be acknowledged. Let us know what membership services you need to  
advance the space communities concept. Thank you for your support!

L-5 Society 1620 N. Park Ave. Tucson, AZ 85719  
(602) 622-1344

## Acknowledgments

We would like to thank the people and organizations in Tucson, Arizona which provided the money, labor, and equipment to set up our office and publish the first issue of the L-5 News: Barbara Fisher, Tucson Public Advocates; Bill Weigle, Chairman of Student Union Activities Board Bicentennial Committee; Roy Parsons, Brad Barber, and Dave Scheer of the University of Arizona; Bill and Kate Daniel; Scouten Metal Products Division; Analog Precision, Inc. ; Community of Christ Lutheran Church and the Campus Christian Center.

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